due to activation of melanocyte-specific autoimmunity; for these reasons, this phenomenon should be known as ''drug-induced vitiligo'', rather than with the less accurate term ''drug-induced depigmentation''.[4] Goldstein et al. reported that testosterone may interact with tyrosine hydroxylase activity; besides, it is known that agents that interact with tyrosinase activity can paradoxically disrupt melanin production, by inducing the cellular stress response with inflammation and autoimmune destruction of melanocytes.[5] However, to date, there is no evidence of testosterone-induced vitiligo.

As far as the authors know, the present case represents the first clinical confirmation of the onset of vitiligo in a patient with hypogonadism, supporting the thesis that hypogonadism can be associated with vitiligo. At the same time, there is insufficient evidence to support a role of testosterone replacement therapy in the development of vitiligo. Indeed, no areas of depigmentation were observed at the testosterone application sites (chest and thighs). Further studies are needed to investigate the role of testosterone in pigmentation, also extending the research to possible new therapeutic implications.

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Authors' contributions

Giovanni Paolino: Drafting and editing of the manuscript; intellectual participation in the propaedeutic and/or therapeutic conduct of the studied cases; critical review of the literature; critical review of the manuscript.

Pietro Bearzi: Drafting and editing of the manuscript; intellectual participation in the propaedeutic and/or therapeutic conduct of the studied cases; critical review of the literature; critical review of the manuscript.

Santo Raffaele Mercuri: Approval of the final version of the manuscript; intellectual participation in the propaedeutic and/or therapeutic conduct of the studied cases; critical review of the literature; critical review of the manuscript.

Conflicts of interest

None declared.

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Malignant melanoma after treatment for Merkel cell carcinoma☆,☆☆

Dear Editor,

A 98-year-old male was referred complaining of a mass on his left cheek. He had never received immunosuppressive therapy. Physical examination showed a solid, dome-shaped, reddish tumor, 35 mm in diameter, on his left cheek. Microscopic examination of a biopsy specimen revealed an infiltrative tumor in the dermis. The tumor was composed of sheets and trabeculae of atypical cells with scant cytoplasm, and round nuclei with stippled chromatin (Fig. 1). Immunohistochemistry results revealed that the tumor cells stained positive for cytokeratin 20 and neuron specific enolase. The patient underwent total resection of the tumor. However, because of the patient's advanced age, neither the patient nor his family wished further treatment, including radiotherapy, choosing follow-up visits only. Two years later, he presented again with erosion of the right hallux. Physical examination showed widespread erosion of his right hallux, which in part had a reddish nodule. The nail had completely disappeared (Fig. 2). Histological examination revealed many atypical cells infiltrating irregularly from the epidermis to the dermis (Fig. 3). These atypical cells were immunoreactive for MART-1 and HMB-45. For the same reason as before, the patient and his fam-

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☆☆ Study conducted at the Fukushima Medical University, Fukushima, Japan.

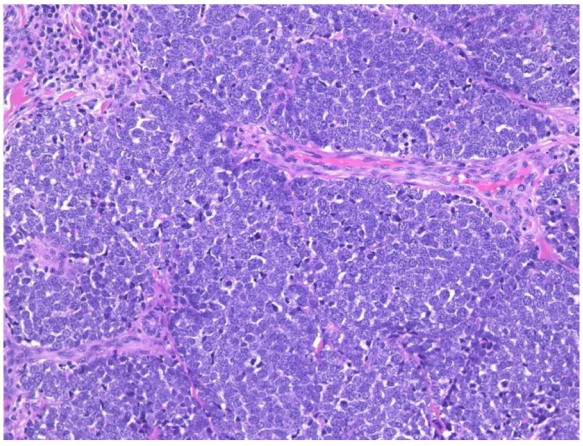

Figure 1 Microscopic examination of a biopsy specimen from a mass on patient's left cheek. There was an infiltrative tumor in the dermis. The tumor was composed of sheets and trabeculae of atypical cells with scant cytoplasm, and round nuclei with stippled chromatin (Hematoxylin & eosin, ×200).

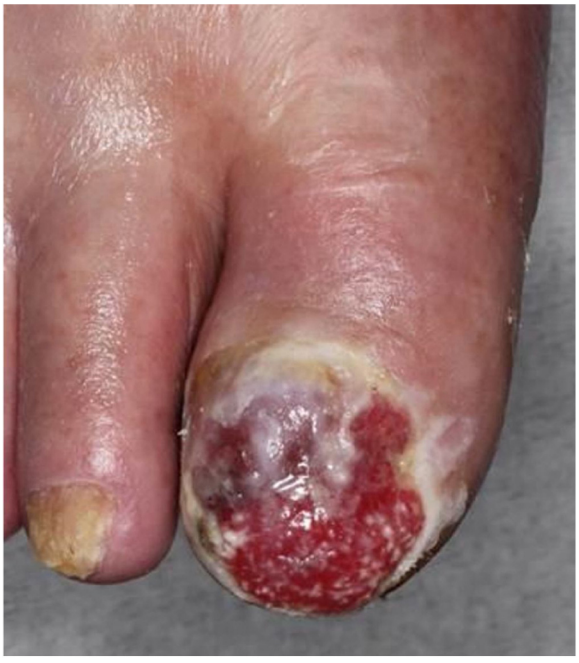

Figure 2 Physical examination revealed widespread erosion of the right hallux, which in part had a reddish nodule. The nail had completely disappeared.

ily wanted only local symptomatic treatments at a nearby hospital.

Merkel cell carcinoma (MCC) is a rare cutaneous neuroendocrine cancer that is known to be a highly aggressive malignancy with frequent metastasis and a high mortality rate. A previous review article revealed increased risk of a second primary cancer after the diagnosis of MCC, and cutaneous malignant melanoma (MM) is one of the most common cancers after MCC.[1] Miller and Rabkin reported that occurrences of MM and MCC were similarly increased with sun exposure and immunosuppression.[2] Considering that ultra violet (UV) rays attenuate systemic immune responses *via*

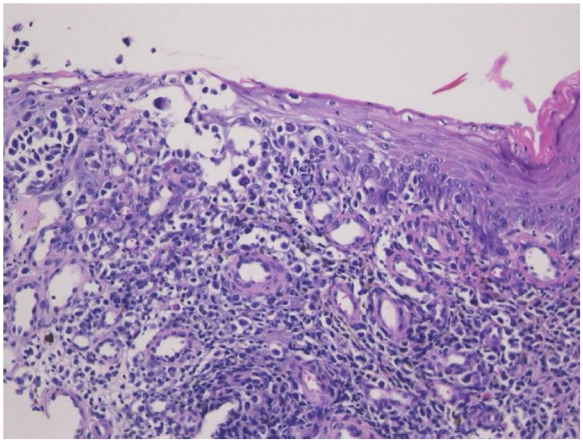

Figure 3 Histological examination showed many atypical cells infiltrating irregularly from the epidermis to the dermis (Hematoxylin & eosin, ×200).

the induction of regulatory T-cells, systemic immunosuppression may be an essential factor in the development of both conditions in a patient.[3] In the present case, MCC occurred on the left cheek, and MM occurred on the right hallux. In Japan, the majority of MM cases occur on the edges of limbs that are not directly affected by UV rays, and external irritation has been considered one of the risk factors.[4] However, systemic immunosuppression associated with aging and/or UV irradiation may be a common cause of both conditions in the present case. According to previous articles, several cases in which MCC and MM developed in a patient have been reported from countries other than Japan; however, to the best of the authors' knowledge, this is the first report of its type from Japan. Interestingly, there was a report of a case of MCC that developed in a patient during treatment with immune checkpoint inhibitors for MM.[2,5] Given the increase of immune checkpoint inhibitors used to treat MM, the number of cases in which both MCC and MM develop in a patient may increase in Japan, as well as around the world.

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Authors' contributions

Masato Ishikawa: Drafting and editing of the manuscript; collection, analysis, and interpretation of data; intellectual participation in the propaedeutic and/or therapeutic conduct of the studied cases; critical review of the literature.

Toshiyuki Yamamoto: Approval of the final version of the manuscript; conception and planning of the study; critical review of the manuscript.

Conflicts of interest

None declared.

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Purpura annularis telangiectodes of Majocchi☆,☆☆

Dear Editor,

Purpura annularis telangiectodes of Majocchi is a rare subtype of pigmented purpuric dermatosis. It is more common in children and young females and predominantly affects the lower limbs, with symmetrical annular reddish-brown macules.[1,2] Little is known of its etiology, which may be associated with viral infections, chronic comorbidities, and use of medications. The diagnosis is clinical and histopathological. There is no consensus regarding treatment. Management is based on reports and case series, with variable response to the proposed treatments.[3,4]

A 6-year-old female patient, daughter of consanguineous parents, presented lesions since 2 years old. The patient had no history of systemic symptoms, allergies, or continued use of medications, except sporadic use of paracetamol. In the beginning, the lesions were erythematous, and subsequently evolved to annular and/or irregular hyperchromic macules, symmetrical in the legs, as well as in the right upper limb, and with an isolated lesion in the anterior cervical region (Fig. 1). A skin biopsy of the right thigh was performed, demonstrating a lichenoid lymphohistiocytic infiltrate in the upper dermis and red blood cell extravasation, as well as foci of lymphocyte exocytosis and perivascular mononuclear infiltrate, without pigmentary incontinence or vasculitis (Fig. 2). Perls' Prussian blue staining indicated the presence of hemosiderin deposition in the papillary dermis (Fig. 3). The patient was screened for hematological, infectious, and rheumatological diseases, all negative. The authors opted for treatment with colchicine orally, with no response after five months of medication use.

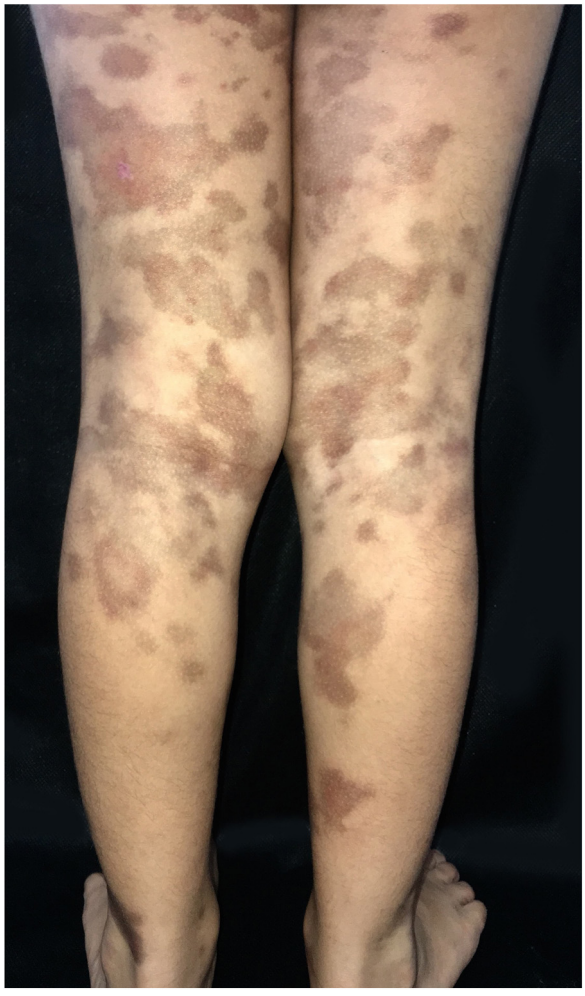

Figure 1 Multiple brownish macules on the legs and thighs.

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